



# User's Manual Version 1.0

English



1620 Oakland Road Suite D206 San Jose, CA 95131 United States  
 Toll Free (US/Canada): 8668-US-SENA (866-867-7362)  
 Tel: +1 (408) 573-7425 Sales direct tel: +1 (408) 922-9786  
 Fax: +1 (408) 907-3738  
 www.sena.com / sales@sena.com

## 1. Introduction

The LTC100 is a high performance signal converter between RS-232 and RS-422/485 which operates with or without external power source. It supports both half duplex 2-wire RS-485 and full duplex 4-wire RS-422. The LTC100 is also equipped with 15 KV ESD surge protector to protect itself against damage from electrostatic discharge. The LTC100 is covered by 1-year limited Sena Warranty from the date of your purchase.

## 2. Features

- The LTC100 is a serial communication interface converter which converts RS232 signals to RS422 or RS485 signals and extends the distance up to maximum 1,2Km. It also allows to be connected to maximum 32 devices by Multi-drop mode as well as Point to Point mode.
- The LTC100 is designed to be operated without any external power supply, when it is connected to PC or to RS232 connector of various system. But a connector for the external power (not included in the product package) is also equipped for the case that an external power supply should be used.
- The LTC100 includes highly-effective Surge Protector to protect itself from the transient voltage(Max. 15,000 volt) coming along the communication line.
- The LTC100 has a fast automatic TX enable circuit for RS485, which makes it a perfect solution for any installing environment without any additional software work.

## 3. Specifications

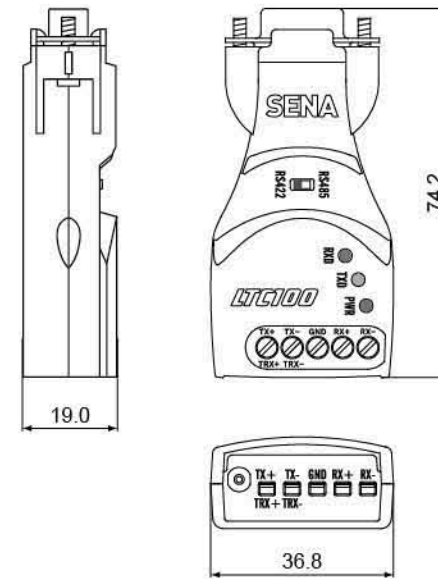
Model	LTC100 : DB9 Connector, Automatic opening-closing function, terminal resistor
Communication type	Asynchronous serial communication
Transmission speed	Maximum 115.2Kbps
Distance	Maximum 1,2Km
Connector	RS232 side : DB9 Female RS422/RS485 side : Terminal Block
Slide switch	RS422/RS485 : RS422/RS485 selection
Power	Power off : RS232 DTR, TXD, RTS signal Power on : External power adapter (DC 7V - 12V, In(-)/Out(+))
Weight	33g
Internal connection	DCD, DSR, CTS pins are selectively connected to GND
Terminal resistor	RS422/RS485 common jumper : JP2 jumper connects or disconnects terminal resistor.
Circuit protection	15,000 volt-surge protector included,
LEDs	TXD, RXD, PWR
Mode	RS422 mode : Point-to-Point, Multi-Drop RS485 mode : Echo, Non-Echo
RTS Control	Auto Toggling
Environment	Operating Temperature : 0 ~ 55°C (32~131°F) Storage Temperature : -20~70°C (-4~158°F) Humidity : 5 ~ 95% Non-Condensing
Regulatory approvals	CE, FCC, KCC
Warranty	1-year Limited Warranty

Leading M2M Solutions

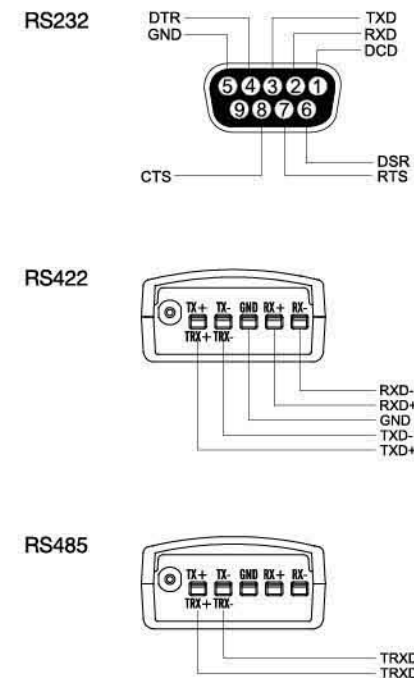
**SENA Technologies**

www.sena.com

## 4. Dimension



## 5. Connectors



## 6. Power Supply

The LTC100 can be port-powered from the RS232 port when no external power source is connected to the unit. When it is port-powered, either TXD, RTS or DTR signal should stay ON to supply the power to the LTC100 properly. If the application doesn't allow any of those signals to stay ON, optional external power adaptor or other external power source should be used to power the LTC100. You can recognize whether the power is properly supplied or not by checking the power LED on the LTC100. The power circuit of the LTC100 includes a high-capacity capacitor to provide stable power to the unit when it is port-powered. Therefore there can be a time delay (within 0.1 sec) until this capacitor is filled with enough power and to work correctly. If the application program controls TXD, RTS and DTR signals directly, it is recommended to wait about a second initially before start to use the LTC100. If the power LED doesn't turn on by using the port-power, please use external power source to power the unit.

## 7. Terminal Resistor

When a communication error occurs due to noise on the lines, install the terminal resistors to solve the problem.

- Terminal resistor installation
  - Open the case, connect the jumper inside and then install the terminal resistors.
  - Refer to '8. Installation' for more detail.

## 8. Installation

The LTC100 is designed to meet various installation environments by selecting operation mode. Please set the slide switch on the top of the unit according to your application.

- The RS422/RS485 slide switch selects the signal interface type
  - If set to RS422, it converts RS232 to RS422
  - If set to RS485, it converts RS232 to RS485

Once the slide switch is set, connect RS422 (4 lines) or RS485 (2 lines) cables to the terminal block of the unit and tighten the screws with a screw driver. Then connect the DB9 connector side to PC or RS232 port of the equipment. It may not be necessary to connect the GND pin depending on the installation.

